



Jesus Vazquez  
#B-13 Alameda St.  
Sta. Juanita Urbanization  
Bayamon, Puerto Rico 00956

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JUN 09 2004  
TECHNOLOGY CENTER R3700

March 22, 2004

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Attention: Mr. Michael Kocz Jr.  
Primary Examiner  
Art unit 3746

Reference # 09/173,828

Dear Mr. Kocz

Thank you for the kind attention and consideration that you have always expressed throughout our postal as well as our telephone conversations. I am responding to your advisory action dated December 29, 2003, which was in response to my communication filed on 07 November of that same year for which I respectfully submit the following:

- A. Response to and statement of substance of telephonic interview of March 29, 2004
- B. Corrected claims
- C. Model of toroidal embodiment that demonstrates seal ability of valve
- D. Response to Alfred Nittka patent #2238395
- E. No new material declaration
- F. Postal money order for \$210.00 # for a within two (2) month time extension *m/o # 06983943388*
- G. Explanations to all questions posed in office action
- H. Certificate of mailing
- I. Separate pages for amendments to the specifications
- J. Explanation of novel terminology

First of all I want to thank you again ever so much for helping me correct the terminology in my description and title of my invention, The substance of our telephone interview dated March 29, 2004 with the appropriate responses relative to that interview are as follows:

- A. I asked if I was allowed to buy extra time. You answered yes, up to five (5) months.
- B. I believed that the word Toroidal included what I now understand to mean Annular. I had always believed that "toroidal" included structures of various internal configurations or cross sections that included rectangular, round or oval as well as triangular just as long as the overall structure was round or tire (wheel) or donut whole round toroidal cylinder t shaped. As a result our telephonic interview I now know that these are referred to as Annular. I refer to in my original specifications and drawings that prove the annular nature of my invention. Please refer to the original list of reference numerals to verify the following:
- 34A whole round toroidal cylinder assembly,
  - 34B whole rectangular toroidal cylinder assembly,
  - 56 valve for round toroidal cylinder,
  - 67 Valve for rectangular (Annular) toroid cylinder,
  - 76 round piston assembly,
  - 76A rectangular piston assembly,
- Drawing figures 4, 5, 7, 18, 19, 21, 27, 28, 29, & 30 all represent the invention in it's annular version with rectangular cross section of it's cylinder, piston(s) and valve.

As a consequence of all of the above I hereby change all references from Toroid and Toroidal to Annular in all specifications since I now understand Annular also includes Toroidal cross sections. I have also changed this term in my claims to reflect this clarified definition. As was clarified during our conversation I just needed to submit a toroidal model in order to provide the proof of concept in this particular manifestation of my invention therefore as per your request I include a crude model of the Toroidal (round or ovaloid cross section) embodiment of my invention that clearly shows that a conformably shaped isolating valve can easily seal off the expansible chamber thereby preventing the retrograde escape of the working fluid before it has done its work, As can easily be seen said valve's concave ovaloid (spoonish) shape allows it to conform to the inside diagonal curvature of the toroidal cylinder at any angle. The black tape at the inner center of the toroidal cylinder in the model represents the outer periphery of the rotor upon which the conformably shaped piston(s) would be mounted, the actual pistons are not represented in this model because it was not requested in the office action and are not necessary to demonstrate the sealability of the invention.

C. I asked if I could amend the specifications. You answered yes, but that in order to do so I needed to replace the entire paragraph. Which I have and include.

With regards the Notice of reference cited specifically the patent by Alfred Nittka (#2238395) I feel I must point out that my invention does more with less, being simpler with less moving parts, not having to incorporate a reciprocating piston for its function as well as serving a multitude of other purposes, incorporating (previously explained and included) Dynamic Displacement, it's portability, ability to achieve very high speed and efficiency and its much simpler method of operation and construction. My invention serves a multitude of purposes in its manifestation as an expansible chamber device and can be used in many applications some of which are: as a fluid metering device (with a counter), as a multiple fluid pump (externally powered), hydraulic power device (externally powered) and a fluid powered motor (multiple fluids) just to name a few. Compared to Alfred Nittka's invention my invention is:

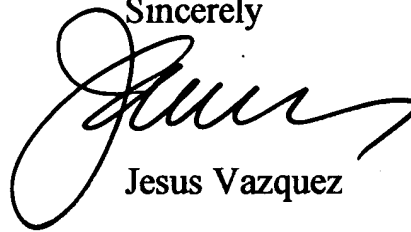
1. Simpler functions with fewer parts.
2. Does not have to incorporate a reciprocating piston for its function.
3. Serves a multitude of other purposes.
4. Has the Ability to achieve very high speed and efficiency.
5. Is practically vibrationless operation.
6. Has a Simpler method of operation.
7. Has less moving parts.

Regarding claim #46 I have amended said claim to illustrate its composition and workings to the best of my ability and supplement that amendment with the following explanation indicating reference frame to give meaning to the term "reversed horizontally" relative to the valve. Reversed meaning that the hinged part of said valve is reversed horizontally 180 degrees thereby causing the flapping and sealing action that moves the most and compartmentalizes the sections of Annular cylinder which we'll call the Flapping lip of said valve so that said lip faces the oncoming sloped back of said piston facing upstream of the fluid flow as opposed to claims 42 and 52 in which this flapping "lip" faces downstream. Please see original drawing figures 8 and 8A.

Therefore what is claimed and I wish to secure via U.S. Patent are the devices described in the claims, the sum of their parts and how they function including the properties and functions described by the novel terminology (to which explanations are again included) such as Dynamic Displacement, Passive Compression and Compound Cycles.

Thank you again for your kind, enlightening cooperation, professionalism and assistance,

Sincerely

A handwritten signature in black ink, appearing to read 'Jesus Vazquez', with a large, stylized initial 'J'.

Jesus Vazquez



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CERTIFICATE OF MAILING

May 29, 2004

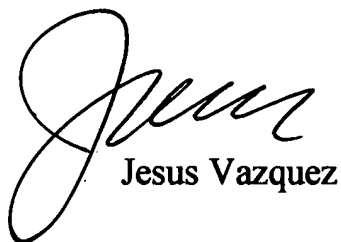
Assistant Commissioner of Patents  
Washington, D.C. 20231

Attention: Mr. Michael Koczo Jr.  
Primary Examiner  
Art unit 3746

Reference # 09/173,828

Dear Mr. Koczo

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to:  
Assistant Commissioner for Patents Washington, D.C. 20231



Jesus Vazquez

**Description of annular model with a round cross section**

The enclosed model is made of various types of plastics including transparent (#61. Accumulator by-pass neck etc.) in order to facilitate the inspection of it's inner workings and construction as it is meant only to show that this model's isolating valve with it's ovaloid or spoonish shape can properly seal the interior of said or any annular toroidal device including its manifestations as indicated in this patent application. I have identified that various parts with numbered stickers that correspond to the original list of reference numerals.

The black arrows on the exterior of the toroidal cylinder indicate rotational direction.

34A. Whole round toroidal cylinder assembly

39A. Rotor

56. Valve for round toroidal cylinder

57. Exhaust port

59. Initial (top inside) seal point

61. Accumulator by-pass neck

75. intake port

Not shown are the piston(s) mounted on the rotor (simulated), the axle shaft or bearings.

## **Explanation of Novel terminology**

In my first claim #42 A Rotary Piston Continuous Flow Positive and Dynamic Displacement Expansible Chamber Device; this title may explain the nature of the invention. The terms that need interpretation such as:

**Dynamic Displacement**, this is merely the hybrid combination of two terms that as you know are used regularly in the field of internal combustion engines. These terms are positive displacement and the dynamic effect. The fact that the valve goes into a fluidic amplifier mode, whereas, it does not completely close all the way at higher revolutions (RPM) thus saving time, motion, momentum, inertia, and wear yet still completing its task of isolating the fluid by amplifying fluid flow and direction, thereby, being a form of the dynamic effect; thus complementing positive displacement at lower revolutions and according to the need. This need is automatically determined by the speed or rate of revolutions and fluid flow. In its simplest manifestation independent claim #42 said valve is free and acts this way naturally without controls. In some of its subsequent dependent claims where the valve is externally controlled, this natural function is interrupted and must then be provided for either mechanically or electrically in the form of cams and governors (figs.31 through 37) that also limit wear (claims 44 and 45). In yet other dependent claims simple rollers are added to the underside of the valves to limit wear (claims 48, 50 and 51, fig. #4 and 5 reference numeral 67).

The above is also true for the independent claim # 52 in its embodiment as an internal combustion engine and its subsequent dependent claims that relate to this subject.

In claim #46 (figures 8 and 8A) I refer to a version of the invention in which the isolating valve is reversed horizontally from its usual position, relative to the rotation of the rotor and pistons. In other words in the inventions regular configuration the pistons first pass the area of the valve's pivoting shaft first, then the sliding flapping area. In this manifestation (claim #46) it's the sliding flapping area of this valve that first encounters the sloped back of the pistons then the valve passes the pivoting shaft area, in effect creating something like a ramp for the evacuating fluids.

My second independent claim #52 also describes the gist of the invention entitled A Continuous Internal Combustion Positive and Dynamic Displacement Passive Compression Compound Cycle Rotary Engine. Some of the terminology in this title also begs explanation as follows:

**Passive compression**, refers to the fact that compression is actually achieved in the following passive manner by the process of combustion itself through the use of precombustion chambers (claims #56 and #57) described as an inner stratified flashover reaction cage, thus named by me because of its space saving concentric design but a precombustion chamber none the less (Figs. 3,4,5,7,9,10-15, 17 etc., reference numeral 65) and passage reductions such as in the combustor to accumulator to top seal point area, diffusers (Fig. 4, 5, reference numeral 62 and 74) and the isolating valve itself; all act like nozzles increasing pressure and compression to which additional air is also added (Fig. 3, reference numeral 66) in order to lean out the mixture and improve combustion and the exhaust.

**Compound cycle**, this refers to the fact that the four cycles usually associated with an internal combustion engine: intake, compression, power, and exhaust occur simultaneously.

The dependent claims #54 and 55 merely add an air canister (Fig. 4 reference numeral 69) also known as a reserve air tank that supplies starting air for the fuel eliminating the need for a starter. This tank or canister replenishes its air supply as needed by means a small electric pump.

I hereby declare that no new material has been added to these claims or to the specifications, that all the material and information are reflected in the original paperwork submitted and that my intention with these changes is to elucidate and further explain the workings and construction of my invention.